

mixing one or more nucleic acid templates with one or more oligonucleotides, wherein said one or more oligonucleotides comprise one or more detectable labels located only internally and said one or more labels undergo a detectable change in an observable property upon becoming part of a double stranded molecule; with the proviso that said one or more detectably labeled oligonucleotides do not comprise an acceptor molecule;

incubating said mixture under conditions sufficient to synthesize one or more nucleic acid molecules complementary to all or a portion of said one or more nucleic acid templates, said one or more synthesized nucleic acid molecules comprising said one or more oligonucleotides; and

detecting the presence or absence or quantifying the amount of said one or more synthesized nucleic acid molecules by measuring said one or more detectable labels.

~~Please substitute the following claim 12 for the currently pending claim 12:~~

12. (Three times amended) A method for quantitation or detection of one or more nucleic acid molecules in a sample during nucleic acid amplification comprising:

mixing one or more nucleic acid templates with one or more oligonucleotides under conditions sufficient to amplify one or more nucleic acid molecules complementary to all or a portion of said one or more templates, said one or more amplified nucleic acid molecules comprising said one or more oligonucleotides, wherein said one or more oligonucleotides comprise one or more detectable labels located only internally and said one or more labels undergo a detectable change in an observable property upon becoming part of a double stranded molecule; with the proviso that said one or more detectably labeled oligonucleotides do not comprise an acceptor molecule; and

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detecting the presence or absence or quantifying the amount of said one or more nucleic acid molecules by measuring the detectable labels of said oligonucleotides.

Please substitute the following claim 18 for the currently pending claim 18:

18. (Three times amended) A method for amplifying a double stranded nucleic acid molecule, comprising:

providing a first and second primer, wherein said first primer is complementary to a sequence within or at or near the 3'-termini of the first strand of said nucleic acid molecule and said second primer is complementary to a sequence within or at or near the 3'-termini of the second strand of said nucleic acid molecule;

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hybridizing said first primer to said first strand and said second primer to said second strand in the presence of one or more polymerases, under conditions such that a third nucleic acid molecule complementary to all or a portion of said first strand and a fourth nucleic acid molecule complementary to all or a portion said second strand are synthesized;

denaturing said first and third strands, and said second and fourth strands; and

repeating the above steps one or more times, wherein one or more of the primers comprise one or more detectable labels located only internally;

with the proviso that said one or more detectably labeled oligonucleotides do not comprise an acceptor molecule.

Please substitute the following claim 20 for the currently pending claim 20:

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20. (Three times amended) A method for the quantification or detection of nucleic acid molecules comprising:

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CDD: mixing one or more labeled oligonucleotides with one or more nucleic acid molecules to be detected or quantitated, wherein said one or more oligonucleotides comprise one or more detectable labels located only internally; with the proviso that said one or more detectably labeled oligonucleotides do not comprise an acceptor molecule; and

detecting or measuring an increase in fluorescence associated with said one or more oligonucleotides hybridizing to said one or more nucleic acid molecules.

Please substitute the following claim 47 for the currently pending claim 47:

47. (Three times amended) A method for detecting a target nucleic acid sequence, comprising:

C4 contacting a sample containing a mixture of nucleic acid molecules with one or more oligonucleotides which comprise one or more detectable labels located only internally and are capable of hybridizing a target nucleic acid molecule, wherein said one or more detectable labels undergo a change in one or more observable properties upon hybridization to the target nucleic acid molecule; with the proviso that said one or more detectably labeled oligonucleotides do not comprise an acceptor molecule; and

observing the observable property, wherein a change in the observable property indicates the presence of the target nucleic acid sequence.

Please add the following new claims:

C5 68. (New) A method for the quantification of one or more target nucleic acid molecules in a sample comprising:

hybridizing one or more detectably labeled hairpin oligonucleotides with one or more

nucleic acid molecules to be quantified, wherein said one or more hairpin oligonucleotides comprise one or more detectable labels located only internally and wherein said one or more labels undergo a detectable change in an observable property upon becoming part of a double stranded molecule, and

quantifying the amount of said one or more target nucleic acid molecules.

69. (New) A method for the quantitation or detection of one or more nucleic acid molecules in a sample during nucleic acid synthesis comprising:

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mixing one or more nucleic acid templates with one or more hairpin oligonucleotides, wherein said one or more hairpin oligonucleotides comprise one or more detectable labels located only internally and said one or more detectable labels undergo a detectable change in an observable property upon becoming part of a double stranded molecule;

incubating said mixture under conditions sufficient to synthesize one or more nucleic acid molecules complementary to all or a portion of said one or more templates, said one or more synthesized nucleic acid molecules comprising said one or more oligonucleotides; and

detecting the presence or absence or quantifying the amount of said one or more synthesized nucleic acid molecules by measuring said one or more detectable labels.

70. (New) A method for quantitation or detection of one or more nucleic acid molecules in a sample during nucleic acid amplification comprising:

mixing one or more nucleic acid templates with one or more hairpin oligonucleotides under conditions sufficient to amplify one or more nucleic acid molecules complementary to all or a portion of said one or more nucleic acid templates, said one or more amplified

nucleic acid molecules comprising said one or more oligonucleotides, wherein said one or more oligonucleotides comprise one or more detectable labels located only internally and said one or more labels undergo a detectable change in an observable property upon becoming part of a double stranded molecule; and

detecting the presence or absence or quantifying the amount of said one or more nucleic acid molecules by measuring the detectable labels of said oligonucleotides.

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71. (New) A method for amplifying a double stranded nucleic acid molecule, comprising:

providing a first and second primer, wherein said first primer is complementary to a sequence within or at or near the 3'-termini of the first strand of said nucleic acid molecule and said second primer is complementary to a sequence within or at or near the 3'-termini of the second strand of said nucleic acid molecule;

hybridizing said first primer to said first strand and said second primer to said second strand in the presence of one or more polymerases, under conditions such that a third nucleic acid molecule complementary to all or a portion of said first strand and a fourth nucleic acid molecule complementary to all or a portion said second strand are synthesized;

denaturing said first and third strands, and said second and fourth strands; and

repeating the above steps one or more times, wherein one or more of said primers comprise one or more detectable labels located only internally and is one or more hairpin primers.

72. (New) A method for the quantification or detection of nucleic acid molecules comprising:

mixing one or more labeled hairpin oligonucleotides with one or more nucleic acid molecules to be detected or quantitated, wherein said one or more hairpin oligonucleotides comprise one or more detectable labels located only internally; and

detecting or measuring an increase in fluorescence associated with said one or more oligonucleotides hybridizing to said one or more nucleic acid molecules.

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73. (New) A method for detecting a target nucleic acid sequence, comprising:

contacting a sample containing a mixture of nucleic acid molecules with one or more hairpin oligonucleotides which comprise one or more detectable labels located only internally and are capable of hybridizing to a target nucleic acid molecule, wherein said one or more detectable labels undergo a change in one or more observable properties upon hybridization to the target nucleic acid molecule; and

observing the observable property, wherein a change in the observable property indicates the presence of the target nucleic acid sequence.

74. (New) The method of any one of claims 10-12, 18, 20, 47, and 68-73, wherein said oligonucleotides comprise a single label.

75. (New) The method of claim 74, wherein said single label is a fluorescent label.
